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Exploring the relationship between compressed work hours satisfaction and absenteeism in front-line service work

Abstract

There has been an upsurge of interest in compressed workweek schedules because of the opportunities they provide for enhanced organizational efficiency and more balanced work and life roles for employees. This study tested a moderated mediation model of the effects of compressed work hours satisfaction on absenteeism with the purpose of exploring both the mediation effects of emotional exhaustion and physical health and the moderating effects of sex on this relationship. It utilized data drawn from a sample of 236 contact-centre service workers linked to absenteeism data collected for a period of 12 months following the survey. Results indicated that compressed work hours satisfaction was associated with lower absenteeism and that this relationship was mediated sequentially through emotional exhaustion and physical health. Although the indirect effect of compressed work hours satisfaction on absenteeism through emotional exhaustion and physical health was not significantly different between women and men, the relationship between compressed work hours satisfaction and physical health was positive for women but not for men. The implications of these findings are discussed.

Keywords: compressed work hours satisfaction; emotional exhaustion, physical health; absenteeism; women

Introduction

Organizations now use a wide range of flexible work schedules to meet their business requirements. In areas as diverse as hospitality, retailing and essential services, non-standard working arrangements are commonly used to ensure an extended-hours' capability and to service the needs of the so called 24-hour society (Bambra, Whitehead, Sowden, Akers & Petticrew, 2008). An increasing number of employees have work hour arrangements that no longer conform to the traditional model of a fixed eight-hour day, five days a week schedule (Arbon, Facer & Wadsworth, 2012; Martin, Wittmer & Lelchook, 2011). This development has been driven not only by business needs but also by social pressures and demands from employees for greater flexibility to reconcile the competing pressures of work and non-work including family life and leisure activities (Baltes, Briggs, Huff, Wright & Neuman, 1999; Brough & O'Driscoll, 2010).

Within this context there has been increased interest in the compressed workweek (CWW) with a growing number of organisations making it available to employees in both Europe and the USA (Hinkin & Tracey, 2010; Kossek & Michel, 2011; Van Wanrooy, Bewley, Bryson, Forth, Freeth, Stokes & Wood, 2013). Under a compressed workweek schedule the working week is compressed into fewer than five days by increasing the number of hours worked each day. The most frequent type of CWW schedule involves a 10-hour day, four-day week although it is not uncommon for it to take the form of a 12-hour compressed day (Smith, Hammond, Macdonald & Folkard, 1998).

Work schedules that meet both the needs of the organization and its members can enhance organizational effectiveness and help employees achieve a better balance between their work and family/life roles (Kossek & Michel, 2011). Although compressed work schedules have been associated with a number of positive affective reactions there is little evidence of any relationship with behavioural outcomes such as absenteeism. Baltes et al's

(1999:508) meta-analysis of the effects of compressed work schedules concluded that the introduction of the compressed workweek did not appear to be associated with absenteeism or ‘enhance the motivation of employees to attend’.

Although absenteeism may not be affected by the introduction of compressed workweek schedules per se it may be shaped by the employee’s perceived satisfaction with those work arrangements. Previous studies have shown that employee responses to the introduction of the compressed workweek can vary according to sex, age and family responsibilities (Dickinson & Wijting, 1975; Hill et al., 2008; Nord & Costigan, 1973). Compressed work schedules may have different effects on different people. They may provide benefits to some but not to others. The CWW may fulfil the needs of workers with family responsibilities but be less satisfactory for older workers who might suffer fatigue and greater physical stress from working 10 or 12-hour shifts (Arbon, Facer & Wadsworth, 2012).

The purpose of this study is to investigate how and when employee satisfaction with compressed workweek schedules might affect subsequent attendance behaviour. Specifically, we explore the prediction that compressed work hours satisfaction will be associated with a reduction in workplace stress, perceptions of better physical health and lower absenteeism. In examining these issues we seek to make a number of contributions to the literature.

First, drawing on the theory of work adjustment (Pierce & Newstrom, 1980; Pierce & Dunham, 1992) we argue that compressed work hours satisfaction will be associated with enhanced opportunities for a harmonisation of work and personal time demands and a lower incidence of workplace strain (Dalton & Mesch, 1990). Work adjustment theory emphasises the importance of individual-job congruency and the role of flexible work arrangements in fulfilling the needs that individuals bring to the job. Thus, we propose that compressed work hours satisfaction will be associated with lower emotional exhaustion because of the increased capacity of individuals to meet the demands of their jobs. Second, in order to gain a

better understanding of the connection between compressed work hours satisfaction and absenteeism we explore the hypothesis that this relationship is mediated by emotional exhaustion and physical health, both of which have been identified as mechanisms through which work strain can affect employee absence (Darr & Johns, 2008). Finally, we examine how sex moderates the mediated relationship between compressed work hours satisfaction and absenteeism. Because we expect that satisfying work schedules will provide greater opportunities for women to harmonise work and non-work responsibilities and will be associated with improved affective responses to the work environment (Byron, 2005; Hill et al., 2008), we propose that the relationship between compressed work hours satisfaction and absenteeism (through emotional exhaustion and physical health) will be stronger for women than for men. In sum, we extend the contribution of work adjustment theory to research on the CWW by investigating the role of work schedule satisfaction in affecting the withdrawal of employees from work in the form of absenteeism.

Theoretical background and hypotheses

The theory of work adjustment as applied to the CWW was first developed by Pierce and Newstrom (1980) and is now widely seen as providing the most useful conceptual framework to explain the effect of flexible scheduling on employee attitudes and behaviour (Baltes et al., 1999). Work adjustment is defined as the process by which the individual ‘interacts with and comes to terms with the work environment’ (Pierce & Newstrom, 1980: 120). The theory emphasises the matching of job characteristics and individual needs and the role of the work environment in fulfilling the requirements of the employee (Dawis & Lofquist, 1987). A key element in this process is the congruency between the individual and the job whereby work adjustment is said to occur when there is a close correspondence between the needs of the employee and the satisfaction of those needs by the work

environment (Dunham, Pierce & Castaneda, 1987). The work adjustment model provides a conceptual link between flexible work arrangements and employee behaviour and supports the prediction that compressed working hours satisfaction will be associated with a closer alignment of work and non-work demands and with a lower incidence of workplace strain (Dalton & Mesch, 1990).

The most common form of workplace strain in customer service work is job burnout (Maslach & Jackson, 1981). The core component of job burnout is emotional exhaustion, which is characterized by feelings of tiredness and fatigue and the depletion of an individual's physical and emotional resources (Maslach & Leiter, 2008). Employees who suffer from emotional exhaustion typically feel they lack the adaptive resources to perform their job effectively (Halbesleben & Buckley, 2004). Work schedules that help provide a closer fit between the personal time demands of employees and the emotional requirements of the job can act as an important resource to minimise strain (Bakker, Demerouti & Euwema, 2005). They can reduce fatigue and energise and sustain work behaviour (Grzywacz et al., 2008). Compressed working hours involve less travel time and less onerous commuting as prime-time traffic patterns are avoided (Sundo & Fujii, 2005). Satisfaction with compressed hour schedules has been associated with perceptions of greater rest and recuperation (Lingard et al., 2007), improved sleeping behaviour (Mitchell & Williamson, 1999), better arranged leisure time (Vega & Gilbert, 1997) and decreased interference with activities with family and friends (Dunham et al., 1987).

Compressed schedules offer employees more control over the timing of non-work demands as personal appointments and other non-work activities can be scheduled more easily within employee-controlled non-working time (Kossek & Michel, 2011). Larger blocks of non-working time mean less stressful commuting and greater opportunities for the harmonization of work and non-work activities. Compressed working hours can contribute to

work adjustment by facilitating a closer alignment of work and personal time demands (Pierce & Newstrom, 1982). Thus it could be expected that work schedules that are more capable of satisfying the needs of employees will serve as a motivational resource to increase the capacity of individuals to meet the emotional demands of their jobs and reduce feelings of being used up and worn out.

Hypothesis 1. Compressed work hours satisfaction will be negatively associated with emotional exhaustion.

The work adjustment model suggests that compressed hours satisfaction will not only be associated with less employee strain but also with better physical health (Dalton & Mesch, 1990; Pierce & Newstrom, 1982). A work environment that helps harmonise work and personal life demands and reduces strain can provide opportunities for improved health (Bambra et al., 2008). Emotional exhaustion has been linked to a variety of health-related problems including headaches, insomnia, hypertension and the increased risk of cardiovascular disease (Melamed, Shirom, Berliner & Shapita, 2006). There is also evidence that job burnout including its core component emotional exhaustion is associated with a deterioration of social and family relationships and greater work-life conflict (Burke & Deszca, 1986; Jackson & Maslach, 1982). Emotionally exhausted employees often lack the physiological resources to ward off illness and maintain physical wellbeing (Leiter & Maslach, 2001; Segerstrom & Miller, 2004). Emotional exhaustion has also been associated with poor health behaviours including smoking and alcohol consumption, a lack of physical exercise and low participation in physical leisure activities (Gorter, Eijkman & Hoogstraten, 2000; Melamed, Kushnir & Shirom, 1992). Work schedules that enable individuals to

manage better their off-the-job responsibilities can help relieve pressure on valued time resources and reduce the likelihood of ill-health.

Hypothesis 2. Emotional exhaustion will be negatively associated with physical health.

Pierce and Newstrom (1980) suggest that work adjustments resulting from improved opportunities to align work and personal life demands can affect organizationally-related behaviour such as absenteeism. Larger blocks of non-working time can enable employees to reduce inter-role pressures thereby improving both physical health and work attendance (Rhodes & Steers, 1990). Physical health is recognized as an important predictor of absence (Brooke, 1986; De Boer, Bakker, Syroit & Schaufeli, 2002; Geurts, Buunk & Schaufeli, 1994). Health-related problems such as high blood pressure, headaches, tension and fatigue have been found to affect an employee's ability to attend work (Harrison & Martocchio, 1998). Workplace stressors can trigger both physical and psychological changes in an individual which can weaken the immune system and give rise to illness and absence (Toppinen-Tanner, Ojajarvi, Vaananen, Kalimo & Jappinen, 2005). Furthermore, physical symptoms of stress can deplete coping resources and also lead to employee absence (Bakker, Demerouti, De Boer & Schaufeli, 2003). Darr and Johns (2008) found a positive but small physical illness - absence relationship in their meta-analysis of research on work strain, health and absenteeism.

Hypothesis 3. Physical health will be negatively associated with absenteeism.

In addition to understanding the potential relationship between compressed work hours satisfaction and absenteeism we are interested in exploring the intervening mechanisms that might underlie the association. If employees are satisfied with compressed work hours how might that reduce absenteeism? We propose that the relationship between compressed work hours satisfaction and absenteeism is sequentially mediated by emotional exhaustion and physical health. Two of the most commonly examined variables in absence research are emotional exhaustion and physical health (Bakker, Demerouti, De Boer & Schaufeli, 2003; Brooke, 1986; Deery, Iverson & Walsh, 2002). An inability to attend work due to illness or poor health can be triggered by a strain process induced by emotional exhaustion (Darr & Johns, 2008). Employees who are satisfied with their compressed work schedules may be less likely to be absent because they experience less emotional exhaustion and enjoy better health. Work schedules that respond to the needs of employees can help replenish emotional resources by facilitating a better management of role-related tasks across both work and non-work domains (Facer & Wadsworth, 2008; Kossek & Michel, 2011). This can lead to less workplace strain and to better physical health as pressures are relieved on valued time resources thereby reducing risks of illness and disease (Cohen & Williamson, 1991; Melamed et al., 2006; Schaufeli, Bakker & Van Rhenen, 2009) and providing greater opportunities for a healthier lifestyle (Allen & Armstrong, 2006; Leiter & Maslach, 2001). Previous path analysis provides support for job burnout and illness as mechanisms through which work strain can influence absenteeism (Baba, Galerpin & Lituchy, 1999). We thus predict that the relationship between compressed work hours satisfaction and absenteeism will be mediated by emotional exhaustion and physical health.

Hypothesis 4. Emotional exhaustion and physical health mediate the relationship between compressed work hours satisfaction and absenteeism.

Compressed work hour arrangements can help reduce inter-role stressors by assisting employees to attend more easily to their non-work responsibilities without compromising their work obligations (Shockley & Allen, 2007). The family represents the main non-work responsibility in employees' lives (Allen, Herst, Bruck & Sutton, 2000; Eby et al., 2005; Greenhaus & Beutell, 1985). Consequently, those individuals who take primary responsibility for the household and for the family could be expected to benefit most from compressed working hour arrangements.

Research suggests that women assume the major burden of responsibility for the household and devote considerably more time to domestic work than men (Boyar, Maertz & Pearson, 2005; Vaananen, Kevin, Ala- Mursula, Pentti, Kivimaki & Vahtera, 2005). Women are also more likely than men to take on the role of primary family caregiver even when they work full time (Konrad, Ritchie, Lieb & Corrigall, 2000), and to experience more family-related demands and family-to-work conflict (Byron, 2005). Role pressures from the family domain are also associated with greater emotional exhaustion (Purvanova & Muros, 2010). Furthermore, research indicates that home-based stresses serve to accentuate the effect of work stressors on emotional exhaustion for women but not men (Price & Spence, 1994). The effect of compressed work hours satisfaction on emotional exhaustion could therefore be expected to be stronger for women than for men because of the opportunities for greater facilitation of family and household tasks. There is evidence that men and women utilize work resources in different ways and to different effects (Wayne, Grzywacz, Carlson & Kacmar, 2007). Women have been found to value compressed work week arrangements more than men (Hill et al., 2008). They also use them to accomplish different ends: for women to engage in additional family-related activities and for men to increase personal leisure time (Grzywacz, Carlson & Shulkin, 2008). It was also revealed that women (but not men) who worked compressed working hours benefitted in terms of lower levels of stress and burnout.

These findings are consistent with Byron's (2005) meta-analytic results that suggest that flexible schedules may provide more of a protective benefit for women than for men because women are more likely to assume the major responsibility for the household. By reducing inter-role conflict for women in particular it could be expected that this would help conserve their resources thereby minimising the likelihood of emotional exhaustion, ill-health and of absence (Grandey & Cropanzano, 1999). Based on this line of research, we predict the following moderated mediation:

Hypothesis 5. The mediated relationship between compressed work hours satisfaction and absenteeism (through emotional exhaustion and physical health) will be stronger for women than for men.

The overall model with sex as a moderator is displayed in Figure 1. In this figure, we include all possible paths and interactions in order to reflect accurately the empirical tests of the indirect effects (through emotional exhaustion and physical health) and the possible conditional indirect effects (differences between men and women).

[Insert Figure 1 about here]

Method

Research site and sample

The study was conducted in a police emergency call centre in London. The centre receives a variety of emergency calls, and operators are required to collect information, assist callers and dispatch help to incidents when needed. The site is open 24 hours a day, 365 days a year. It operates a compressed work week schedule involving 12- hour shifts not dissimilar to those of other continuous service public providers (See Barton Cunningham, 1981; Hinkin

& Tracey, 2010; Venne, 1997). All call centre employees work four-days-on and four-days-off (7am to 7pm) followed by four-nights-on and four-nights-off (7pm to 7 am). Full-time employees are entitled to receive up to six months full pay for medically-related sickness absence. Employees are able to 'self certificate' absences for the first seven days but must obtain a doctor's certificate for absences beyond that time. Supervisors are required to track non-attendance on a daily basis and to keep a continuous telephone contact log with employees until they return to work.

A time-lagged design was used in which absenteeism data were collected from personnel records 12 months after the individual attitudinal data. For the attitudinal data collection, surveys were distributed to all 476 contact staff who worked in the centre, along with an information sheet on the purpose of the study and a return postage-paid envelope. Employees were asked to supply their payroll number so that the questionnaire could be matched to their absence data held in the organization's personnel records. A total of 254 surveys were returned. After matching surveys to absence data and accounting for missing data in some of the study's key variables (including compressed work hours satisfaction, sex, emotional exhaustion, and health), the final sample was 236, which represented a 50 percent response rate. There were no significant differences between the final sample ($N=236$) and the total population ($N=476$) in terms of age ($t=-1.10$; $p>.05$) or sex ($\chi^2(1)=.50$, $p>.05$). Women made up 56 percent of the sample and the mean age of the final sample was approximately 39 years. Over two-thirds of the respondents had dependents.

Measures

All data, with the exception of the demographic variables and absenteeism, were collected using a five-point Likert scale where 1= strongly disagree and 5= strongly agree. The reliabilities for the multiple-item scales are shown in Table 1.

Absenteeism was measured as the total days absent during the year. This measure is commonly used in the literature to capture absence that is regarded as involuntary and the result of factors such as illness or strain or family problems (Darr & Johns, 2008; Price & Mueller, 1986; Rhodes & Steers, 1990). Absenteeism data for each respondent were collected from the organization's personnel records for a period of 12 months following the administration of the survey. The average number of days absent was 14.6 days. This level of absence was broadly consistent with call centre industry rates (See Chartered Institute of Personnel and Development, 2013). We then used the square root transformation of the average number of days absent to account for truncated and positively skewed data, a common transformation in the absenteeism literature (Watson, Driver & Watson, 1985).

Physical health was a three-item measure modified from Cyphert (1990) and included the following questions: 'In general my physical health is good', 'Compared to other people my own age that I know, my physical health is poor' (R), and 'Since working at (the call centre), my health has been excellent.'

Emotional exhaustion was a three-item scale from Wharton (1993) and included: 'I feel emotionally drained from my work', 'I feel burned out from my work' and 'I feel used up at the end of the work day'.

Compressed work hours satisfaction (CWHs) was measured through two items developed by the researchers: 'I am happy working 12 hour shifts' and 'I am generally satisfied with my working hours'.

A variety of demographic variables were included in the analysis: age (in years), sex (female =1; male =0), tenure (years of service with the organization), full time status (full time =1; part time = 0), number of dependents (count) and disability (yes=1; no=0). In addition, we controlled for individual differences including *job self-efficacy*, *conscientiousness*, and *job satisfaction*. Three items were used to measure job self-efficacy

including ‘I am confident that I am able to successfully perform my current job’, ‘I can satisfactorily deal with all aspects of my job’ and ‘I feel I have the skills and knowledge necessary to complete my job effectively’ (Wilk & Moynihan, 2005). Self-efficacy ‘refers to a belief in one’s capabilities to organize and execute the course of action required to produce given attainments’ (Bandura, 1997:5) and is said to both reduce stress and increase motivation when facing emotionally-exhausting tasks (Heuven, Bakker, Schaufeli & Huisman, 2006). A strong belief in one’s skills to deal with daily challenges enhances the ability to engage in constructive ways of coping (Schwarzer & Hallum, 2008). A high level of self-efficacy can reduce negative reactions to environmental stressors and has been associated with less anxiety (Saks, 1994) and with lower burnout (Brouwers, Evers & Tomic, 2001).

Conscientiousness consisted of three items from the International Personality Item Pool-Five Factor Model (Goldberg, 1999) including ‘I am always prepared’, ‘I pay attention to details’ and ‘I get chores done right away’. This trait has been associated with beneficial health-related behaviours such as exercise and lower alcohol and tobacco use (Bogg & Roberts, 2004) and has been linked to lower absence (Conte & Jacobs, 2003). It has also been found to be negatively related to emotional exhaustion which may be explained by the higher work ethic and greater perseverance demonstrated by conscientious employees (Swider & Zimmerman, 2010). Finally, we controlled for general job satisfaction using two items from Price & Mueller (1981): ‘I find real enjoyment in my job’ and ‘I am seldom bored with my job’. Research suggests that job satisfaction is negatively associated with both emotional exhaustion (Lewig & Dollard, 2003) and absenteeism (Sagie, 1998).

Analysis

Confirmatory factor analysis was performed to ensure that established multi-item scales were distinct from one another (Brown, 2006). We conducted a CFA using LISREL 8.80 (Jöreskog & Sörbom, 2006) for all multi-item measures. The hypothesized five factor-model (i.e., compressed work hours satisfaction, emotional exhaustion, physical health, job self-efficacy, conscientiousness, and job satisfaction) fit ($\chi^2 (89) = 133.65, p < .001$) the data significantly better than both the null ($\Delta\chi^2 (31) = 2308.35, p < .001$), and the one factor ($\Delta\chi^2 (15) = 1066.26, p < .001$) models. The standardized parameter estimates (factor loadings) of the best fitting five-factor model were all significant ($p < .05$) and ranged from .55 to .96. The measurement model demonstrated acceptable fit: goodness-of-fit index (GFI) of .96, a normed comparative fit index (CFI) (Bentler, 1990) of .98, a standardized root-mean-square residual (SRMR) of .061 (Bentler, 1995), and a root-mean-square error of approximation (RMSEA) (Browne & Cudeck 1993) of .045. Overall, the indices demonstrated acceptable fit (Hu & Bentler 1998, 1999). Finally, as shown in Table 1, the coefficient alphas of the multiple-item measures were greater than the generally accepted threshold of .70 (Nunnally, 1978).

We tested our hypotheses using manifest (observed) variable path analysis in Mplus (Muthén & Muthén, 2012). We adopted this methodology for several reasons. First, it allows us to model individual and multiple mediation paths simultaneously. A number of recent studies have noted the advantages of examining mediation models in lieu of the more traditional Baron and Kenny approach. In particular, there is no requirement for a *total* effect between X and Y to be present when testing for a mediation, as the focus of a mediation test is on the *indirect* effect of X on Y through the mediators (Hayes, 2013; Hayes, 2009). Second, Mplus allowed us to compare the indirect effects through a variety of different paths including through each mediator separately and a serial mediation through two sequential

mediators. All paths were included in our models to avoid biasing the estimate of the serial indirect effect predicted in Hypothesis 4 (Hayes, 2013). Finally, in order to test Hypothesis 5, we examined the moderating effects of sex on the serial multiple mediation model, estimated indirect effects through both mediators individually and sequentially in both men and women, and formally tested for sex differences in these *conditional indirect effects* (Hayes, 2013; Preacher, Rucker & Hayes, 2007). These computations and tests were conducted in Mplus as well.

Results

The descriptive statistics, including means, reliabilities and correlations among the variables are presented in Table 1. As expected, absenteeism was negatively related to physical health ($r = -.26, p < .01$), marginally related to compressed work hours satisfaction ($r = -.12, p < .10$), and positively related to emotional exhaustion ($r = .16, p < .05$). In addition, physical health was negatively related to emotional exhaustion ($r = -.37, p < .01$) and positively related to compressed work hours satisfaction ($r = .29, p < .01$). Finally, among the control variables, women were more likely to have poorer health ($r = -.17, p < .01$) and to be absent ($r = .23, p < .01$) than men. However, there were no significant differences between men and women in terms of emotional exhaustion ($r = .10, ns$) or compressed work hours satisfaction ($r = -.10, ns$). Conscientious employees were healthier ($r = .14, p < .05$). Overall, these relationships are consistent with the hypothesized mediation.

[Insert Tables 1 and 2 about here]

The serial multiple mediation results are provided in Table 2. As recommended by Hayes (2013), we included all possible direct effects in the analysis to estimate the serial indirect effect. Consistent with our first hypothesis (Table 2, model 1), compressed work

hours satisfaction was negatively related to emotional exhaustion ($b = -0.29, p < .01$). We also found support for Hypothesis 2 (Table 2, model 2) in that emotional exhaustion was negatively related to physical health ($b = -0.22, p < .01$). In model 2, compressed work hours satisfaction was no longer significant. Likewise, Hypothesis 3 (Table 2, model 3) was supported: physical health was negatively related to absenteeism ($b = -0.61, p < .01$). In model 3, compressed work hours satisfaction and burnout were nonsignificant, which provides initial support of a mediation effect.

To test our prediction (Hypothesis 4) that the relationship between compressed work hours satisfaction and absenteeism would be mediated sequentially through emotional exhaustion and physical health, we examined the indirect effects (reported in Table 2). In order to be comprehensive and recommended by Hayes (2013), we estimated and tested three indirect paths simultaneously using bootstrap confidence intervals based on 1,000 bootstrap samples. The indirect effect of compressed work hours satisfaction on absenteeism through each mediator individually was non-significant: emotional exhaustion (point estimate = -0.05; 95% CI = -0.14 to 0.03) and physical health (point estimate = -0.06; 95% CI = -0.14 to 0.00). However, the indirect effect of compressed work hours satisfaction on absenteeism through emotional exhaustion and physical health in serial was negative and significant (point estimate = -0.04; 95% CI = -0.08 to -0.01), providing support for Hypothesis 4. Overall, the relationship between compressed work hours satisfaction and absenteeism was mediated sequentially through emotional exhaustion and physical health.

[Insert Table 3 and Figure 2 about here]

Finally, we examined whether the indirect relationship between compressed work hours satisfaction and absenteeism (through emotional exhaustion and physical health)

differed between men and women. To test this relationship, we estimated the serial mediation model with sex as a moderator of all paths to allow for sex differences to manifest themselves anywhere in the process (Hayes, 2013). As shown in Table 3, there were significant interactions between compressed work hours satisfaction and female ($b = 0.23$; $p < .05$) when examining physical health, and between emotional exhaustion and female ($b = 0.86$; $p < .05$) when predicting absenteeism. We plotted the results for the interaction between compressed work hours satisfaction and female in Figure 2, and found that the relationship between compressed work hours satisfaction and physical health was positive for women, but not for men. Next, because an analysis of moderated mediation is based on the conditional indirect effects and their difference (see Hayes, 2013, 2014), we presented the point estimates (and the corresponding bootstrap confidence intervals) at the bottom of Table 3. The results indicate that the indirect effect of compressed work hours satisfaction on absenteeism (through emotional exhaustion and physical health) is not significant for women or men. There was no significant difference between the serial indirect effects for men compared with women (difference = $-.00$; 95% CI = -0.09 to 0.05). Thus Hypothesis 5 is not supported. However, the indirect effects through emotional exhaustion are significantly different between men and women (point estimate = $-.23$; 95% CI = -0.52 to -0.11), and marginally different between men and women through physical health (point estimate = $-.20$, 95% CI = -0.41 to -0.05). Thus, although the predicted serial mediation did not differ between men and women, there is some evidence of significant differences through each mediator separately.

Discussion

The primary objective of this study was to identify how and when employee satisfaction with compressed work hours affected absenteeism. Drawing on the work adjustment model we examined both the mediation effects of emotional exhaustion and

physical health, and the moderating effects of employee sex on the relationship between compressed work hours satisfaction and absenteeism. In line with our predictions, the study showed that compressed work hours satisfaction was associated with lower absenteeism and that this relationship was mediated sequentially through emotional exhaustion and physical health. Furthermore, we observed important differences between women and men. The relationship between compressed work hours satisfaction and physical health was positive for women but not men. In addition, the indirect effect of compressed work hours satisfaction on absenteeism through emotional exhaustion was significant for women but not for men.

This study helps to provide a better understanding of the behavioural responses of employees to flexible work schedules and contributes to the extant literature on compressed workweeks in a number of ways. First, it identifies the process through which satisfying work schedules can affect employee attendance and extends the application of the theory of work adjustment to the subjective evaluation of working hour arrangements. Second, it points to the limited although important moderating role of sex in terms of the relationship between compressed work hours satisfaction and absenteeism.

The process through which compressed work hours satisfaction helps shape absenteeism is consistent with the theory of work adjustment and demonstrates its application to outcomes arising from subjective assessments of working time arrangements (Pierce & Newstrom, 1980). The theory points to the importance of individual-job congruency and the role of the work environment in meeting the requirements of the individual (Bretz & Judge, 1994). It suggests that the more a particular schedule corresponds to an individual's needs the more positive will be the employee's attitudinal and behavioural outcomes (Hill et al., 2008). Work schedules such as those involving four-days-on and four-days-off in our study were anticipated to provide employees with greater opportunities to harmonize work and non-work rhythms and result in improved affective responses to the work environment (Dunham, Pierce

& Casteneda, 1987). In line with our expectations, we found that satisfaction with compressed work schedules was associated with less work strain in the form of emotional exhaustion and this in turn was related to better health and improved attendance at work. Emotional exhaustion and physical health were both identified as important psychological mechanisms through which compressed work hours satisfaction can influence employee absence. This implies that work schedules that satisfy the needs of employees can relieve pressures on valued time resources thereby reducing emotional exhaustion and the risks of illness and increasing employee attendance at work (Leiter & Maslach, 2001; Bakker et al., 2003; Schaufeli et al., 2009).

We did not find support for our prediction that the indirect effects through emotional exhaustion and physical health differed between men and women. Nevertheless, our results do suggest that satisfaction with working hours has more benefits for women than for men. This finding has relevant policy implications for managing women's absence. Research indicates that women have higher absenteeism rates than men (Patton & Johns, 2012; Steel, Rentsch & Van Scotter, 2007). Women also engage in more family-directed activities when they miss work (Harrison & Martocchio, 1998). They take greater responsibility for family-related matters than men, and kinship responsibilities are positively associated with absence (Kelly et al., 2008). In addition, women are more likely than men to report higher levels of emotional exhaustion, which carry attendant costs in terms of physical health (Leiter & Maslach, 2001; Purvanova & Muros, 2010). Our results indicate that satisfaction with compressed hour schedules is positively related to physical health for women, but not for men. Previous research has found that women's absence rates are more sensitive than men's absence rates to minor health complaints and to stressful activities outside of work (Leigh, 1981; VandenHeuvel & Wooden, 1995). Satisfying work schedules may therefore be seen to

provide opportunities for improved physical health for women, as they are able to harmonise more effectively the competing time demands of work and non-work.

As a managerial intervention compressed work hours can provide important organisational benefits. Workweek schedules that are congruent with the needs of individuals can help relieve the 'time bind' faced by employees in combining work, family and personal activities (Tausig & Fenwick, 2001). The design of working hours and perceptions of control over work schedules are a significant predictor of work-family conflict for women (Batt & Valcour, 2003). Compressed hour schedules may not offer employees greater choice over the timing of their work (Baltes et al., 1999). However, they do affect the distribution of time between work and non-work and provide employees with expanded opportunities to manage their conflicting role responsibilities (Kelly et al., 2008). Research suggests that schedule regularity rather than schedule flexibility may be more important for women in terms of achieving work-life balance (Tausig & Fenwick, 2001). Regular schedules that incorporate four-days-off work can allow for better planning and management of the competing pressures of the workplace and the household.

It should be noted that the study has a number of limitations. First, the data were collected within a single organization, which restricts the generalizability of the findings. Future studies would benefit from drawing on different types of employees within different organizational settings. Second, all the variables, with the exception of absenteeism, were measured at the same time. This raises the possibility of a different causal ordering of our relationships. However, there is theoretical support for our expectations that the relationships will be in the directions hypothesized (Jackson & Maslach, 1982; Maslach & Leiter, 2008; Pierce & Newstrom, 1980; 1982). Longitudinal data would, nevertheless, provide greater clarity on this issue and allow us to make stronger causal inferences (Finkel, 1995). Third, although there is evidence that women undertake more of the home/family responsibilities

than men (Boyar et al., 2005; Vaananen et al., 2005), we do not measure the amount of family and caregiver responsibilities for men and women in our study. Future research would benefit from the inclusion of measures of caregiver or family responsibilities instead of relying on sex as a proxy for these responsibilities. Finally, the research focused specifically on the role of emotional exhaustion and physical health in mediating the relationship between compressed work hours satisfaction and absenteeism. It is possible that satisfaction with compressed work hours may be associated with the pursuit of other activities such as ‘moonlighting’ or additional paid employment and not with reducing work-related strain and this may affect perceptions of physical health and subsequent absence behaviour (Bendak, 2003). Future studies could examine other work-related outcomes such as employee performance. If satisfaction with compressed work schedules is the result of congruence between the employee and job environment it could be expected that this could lead to more positive job attitudes and higher performance as well.

Conclusion

There has been a recent surge of interest in the compressed workweek as an increasing number of organisations have adopted this form of working arrangement. Our study offers two distinctive contributions to the research on this practice. First, it identifies the role of satisfaction with the compressed workweek as a predictor of employee absence and sheds light on the mechanisms that mediate the relationship between an employee’s satisfaction with their compressed hours and their attendance at work. Second, it shows that there are some important differences between women and men in terms of the intervening mechanisms linking schedule satisfaction and absence. Our study suggests that women could obtain greater benefits than men from compressed working hours satisfaction because of the positive association with physical health and the significantly stronger effect on absenteeism

through emotional exhaustion. This may reflect their enhanced ability to balance work and personal time demands thereby reducing workplace strain. The use of compressed working hours could therefore provide organisations with opportunities to enrich the working lives of women in particular by reducing levels of emotional exhaustion and improving both physical health and work attendance.

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Table 1. Descriptive statistics and correlations^{ab}

Variables	Mean	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12
1. Absenteeism ^c	2.62	2.71	---											
2. Physical health	3.47	0.84	-.26	(.80)										
3. Emotional exhaustion	3.24	1.14	.16	-.37	(.91)									
4. Compressed work hours satisfaction	3.94	1.15	-.12	.29	-.38	(.90)								
5. Dependents	0.69	1.02	-.04	.06	-.08	-.07	---							
6. Tenure	4.69	4.37	.06	-.12	.03	-.01	.19	---						
7. Female	0.56	0.50	.23	-.17	.10	-.10	-.15	-.06	---					
8. Age	38.95	10.15	-.01	.12	-.03	.11	.20	.33	-.17	---				
9. Conscientiousness	4.08	0.62	-.05	.14	.07	.11	.09	.02	.11	.16	(.77)			
10. Full-time status	0.89	0.31	-.12	.12	-.07	.12	-.19	-.11	-.08	-.02	-.04	---		
11. Job self-efficacy	4.31	0.61	-.09	.18	-.22	.13	-.10	-.06	-.06	-.11	.15	.00	(.84)	---
12. Job satisfaction	34.16	0.91	-.10	.20	-.33	.41	-.08	-.10	-.06	-.10	.12	.15	.16	(.75)

^a $n=236$. Reliabilities are reported in parentheses along the diagonal.

^b Correlations above [.12] are significant at $p < .05$ (two-tailed test).

^c Square root transformation.

Table 2. Mediation results ^a

Predictor	Model 1 Emotional Exhaustion <i>b</i> (<i>SE</i>)	Model 2 Physical Health <i>b</i> (<i>SE</i>)	Model 3 Absenteeism <i>b</i> (<i>SE</i>)
Control Variables			
Age	-.00 (.01)	.01 (.01)	.02 (.02)
Female	.09 (.14)	-.22 (.10)*	1.21 (.33)**
Tenure	.01 (.02)	-.03 (.01)*	.00 (.05)
Dependents	-.09 (.07) †	.01 (.05)	-.00 (.17)
Conscientiousness	.29 (.12)**	.20 (.09)*	-.23 (.31)
Full-time status	-.10 (.23)	.17 (.13)	-.45 (.67)
Job self-efficacy	-.27 (.11)**	.10 (.09)	-.00 (.33)
Job satisfaction	-.26 (.09)**	-.02(.06)	-.12 (.29)
Independent Variables			
CWHS	-.29 (.06)**	.10 (.06)	-.03 (.17)
Emotional exhaustion	---	-.22 (.05) **	.16 (.17)
Physical health	---	---	-.61 (.20)**
<i>R</i> ²	.25**	.24**	.13**
Bootstrap indirect effects of:	<i>b</i> (<i>SE</i>)	<i>LL</i> 95% <i>CI</i> ^b	<i>UL</i> 95% <i>CI</i> ^b
CWHS> Emotional Exhaustion >Absenteeism	-.05 (.05)	-.14	.03
CWHS> Physical Health>Absenteeism	-.06 (.04)	-.14	.00
CWHS> Emotional Exhaustion > Physical Health>Absenteeism	-.04 (.02)*	-.08	-.01

^a *n* =236; Unstandardized regression coefficients are reported; standard errors in parentheses.

^b Bootstrap sample size = 1000. CI = confidence interval; LL = lower limit; UL = upper limit.

† *p* < .10; **p* < .05; ***p* < .01. CWHS=compressed work hours satisfaction.

Table 3. Moderated Mediation Results ^a

Predictor	Model 1 Emotional Exhaustion <i>b</i> (<i>SE</i>)	Model 2 Physical Health <i>b</i> (<i>SE</i>)	Model 3 Absenteeism <i>b</i> (<i>SE</i>)
Control Variables			
Age	.00 (.01)	.01 (.01)	.02 (.02)
Female	.09 (.14)	-.22 (.10)*	1.23 (.33)**
Tenure	.01 (.02)	-.03 (.01)*	-.00 (.04)
Dependents	-.09 (.07)	.01 (.05)	-.05 (.17)
Conscientiousness	.30 (.12)**	.23(.09)*	-.10 (.33)
Full-time status	-.10 (.23)	.17 (.13)	-.33 (.67)
Job self-efficacy	-.27 (.11)**	.11 (.09)	-.00 (.33)
Job satisfaction	-.26 (.09) **	-.03 (.06)	-.14 (.28)
Independent Variables			
CWHS	-.29 (.06)**	.09 (.06)	-.03 (.17)
Emotional exhaustion	---	-.23 (.05) **	.17 (.17)
Physical health	---	---	-.63 (.20)**
Interaction terms			
CWHS X Female	.12 (.10)	.23 (.10)*	.41 (.36)
Emotional exhaustion X Female	---	.09 (.09)	.86 (.33)*
Physical health X Female	---	---	-.68 (.40)
<i>R</i> ²	.24**	.27**	.18**
Bootstrap conditional effects:			
	<i>b</i> (<i>SE</i>)	<i>LL</i> 95% <i>CI</i> ^b	<i>UL</i> 95% <i>CI</i> ^b
<i>Conditional indirect effects through emotional exhaustion and physical health:</i>			
Male	-.03 (.03)	-.08	.00
Female	-.03 (.03)	-.11	-.01
Difference	-.00 (.04)	-.09	.05
<i>Conditional indirect effects through emotional exhaustion:</i>			
Male	.09 (.08)	-.03	.22
Female	-.14 (.08)*	-.37	-.07
Difference	-.23 (.11)*	-.52	-.11
<i>Conditional indirect effects through physical health:</i>			
Male	.01 (.03)	-.03	.05
Female	-.19 (.11)†	-.40	-.04
Difference	-.20 (.11)†	-.41	-.05

^a *n* = 236; Unstandardized regression coefficients are reported; standard errors in parentheses.

^b Bootstrap sample size = 1000. CI = confidence interval; LL = lower limit; UL = upper limit.

† *p* < .10; **p* < .05; ***p* < .01 (two-tailed test).

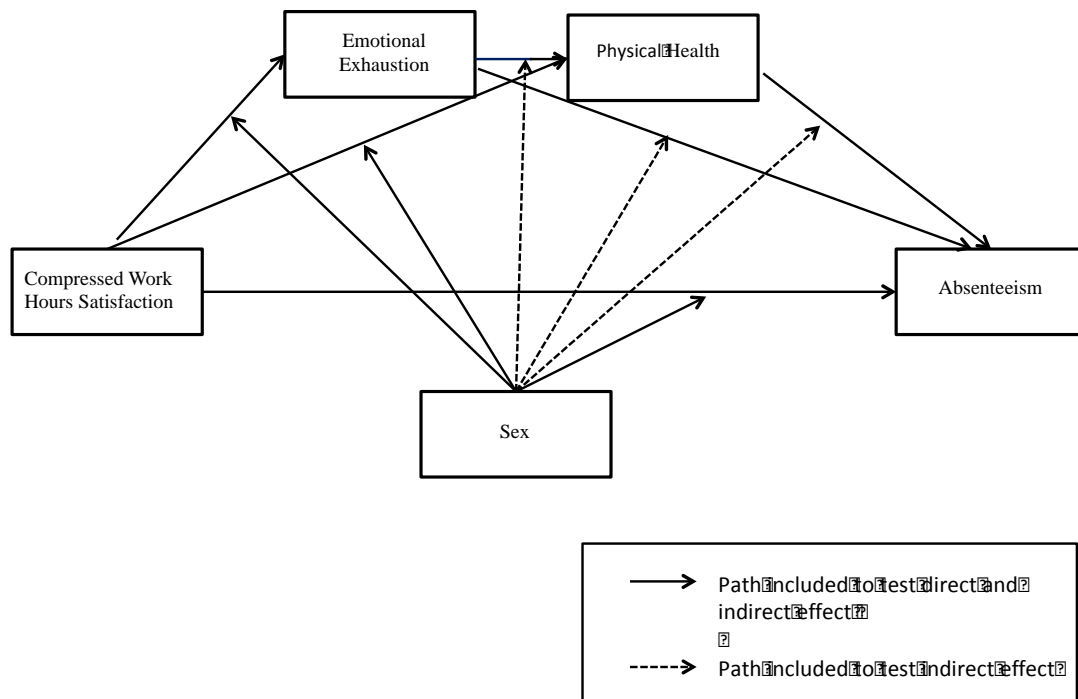


Figure 1. Overall model for compressed work hours satisfaction, emotional exhaustion, physical health, and absenteeism. (moderated by sex)

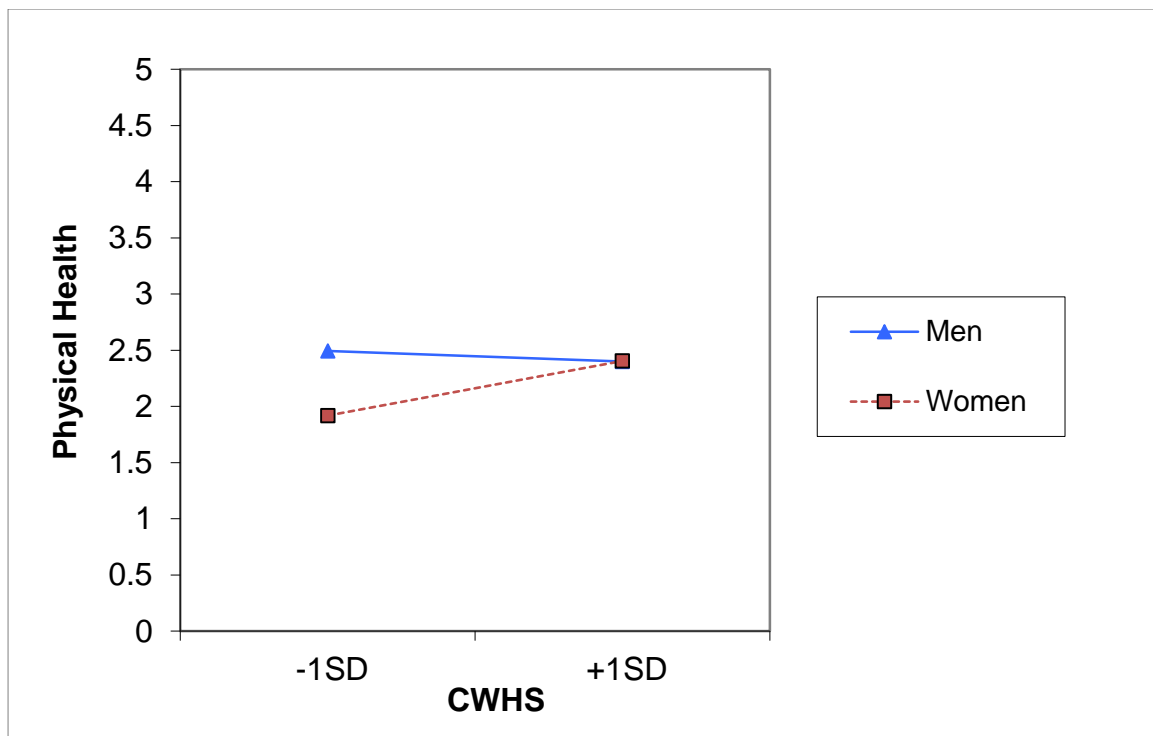


Figure 2. Moderation of the relationship between compressed work hours satisfaction and physical health by sex.